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# Anti-Radical and Cytotoxic Activity of Polysuccinimide and Polyaspartic Acid of Different Molecular Weight

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## Abstract

© 2016, Springer Science+Business Media New York.Effect of poly(succinimide) (PSI) and poly(aspartic acid) (PASP) on free radical reactions and cell viability was assessed. Molecular weight (MW) of PASPs was determined by static light scattering technique and found as 3.9 and 8.3 kDa. Among PSIs and PASPs, only poly(aspartic acid) with higher MW was found to inhibit formation of hydroxyl-radical in Fenton's reaction, although each polymers studied were not able to eliminate diphenylpicrylhydrazyl radical. PASPs were almost non-toxic for 3 T3 fibroblasts and PC-3 cells (IC50 ≫ 3 mg/mL), whereas PSIs diminished cell viability with different IC50 values depending on cell type and polymer MW. Our preliminary data indicate the MW dependence of bioactivity of l-aspartic acid-derived polymers designed as drug carriers and biocompatible materials.

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## Keywords

Cytotoxicity, Free radicals, Molecular weight, Poly(aspartic acid), Poly(succinimide)